

Applicant	:	Smits, et al.
Appl. No.	:	09/479,548
Examiner	:	N/A
Docket No.	:	8668.2029

Remarks

Claims 28-65 were pending. By this Amendment, claims 28, 35, 42, 53, 59, and 65 are cancelled, and claims 36, 41, 43, 54-55, and 60-62 are amended.

In the Office Action, the Examiner rejected claims 28-35, 37, 42, 47, 52, 53, 56, 59, 64, and 65 under the judicially created doctrine of obviousness-type double patenting over several claims of U.S. Patent No. 6,620,010. The Examiner also rejected claims 28, 29, 31, 33, and 35 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,275,744 to Thornton et al. ("the Thornton patent"). Further, the Examiner also rejected claims 40, 42, 47, 52, 53, 56, and 59 under 35 U.S.C. § 103(a) as being unpatentable over the Thornton patent. Finally, the Examiner indicated that claims 34, 36-39, 41, 43-46, 48-51, 54-55, 57-58, and 60-63 were objected to but would be allowable if rewritten in independent form including all limitations of the base claim and any intervening claims.

Applicant respectfully requests consideration of the application and claims in view of the foregoing amendments and the following remarks, which address all of the Examiner's rejections and objections.

Claim Rejections – Double Patenting

Of the claims rejected for double patenting, claims 28, 35, 42, 53, 59, and 65 have been cancelled, thereby obviating the rejection of those claims. As to the other rejected claims – claims 29-34, 37, 47, 52, 56, and 64 – Applicant has submitted with this Amendment a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c).

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Accordingly, the Examiner's rejection of the foregoing claims on the grounds of obviousness-type double patenting has been overcome, and the rejection should be withdrawn.

Claim Rejections – 35 U.S.C. § 102(b)

Of the claims rejected for anticipation under § 102(b), claims 28 and 35 have been cancelled, thereby obviating the rejection of those claims. As to the other rejected claims – claims 29, 31, and 33 – Applicant respectfully submits that the Examiner's rejection of those claims was in error, for the reasons set forth below.

Turning first to the claims at issue, each recites a limitation drafted in means-plus-function form that is directed to a function that is not disclosed or taught in the Thornton patent. Specifically, claim 29 recites:

“means for detecting when non-physiological noise is associated with said EEG response”

Claim 31 recites:

“means for detecting when non-physiological noise is associated with said EEG response, for automatically determining the amount of said non-physiological noise, and for automatically determining when said amount is excessive relative to a threshold”

And claim 33 recites:

“means for determining the polarity bias of said noise component”.

Each of these limitations relates to functions that are simply not described in the Thornton patent or any other prior art. As stated in the present application: “the prior art

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does not provide for the detection of excessive noise in relation to non-physiological noise sources or the use of normative data.” (Spec., pg. 3, ll. 5-6). The devices recited in claims 29, 31, and 33, on the other hand, include the recited means for detecting when non-physiological noise is associated with an EEG response, or for determining the polarity bias of the noise component. As noted in the specification:

One method of determining excessive non-physiological noise is to measure the extent to which the average sum of polarities deviates from chance, i.e., the extent to which the distribution of the average sum of polarities deviates from the distribution that would be expected. Another method of determining excessive non-physiological noise is to measure the difference between the mean and median EEG signal amplitude for a block of sweeps. If such deviation or difference is beyond a pre-set threshold (and therefore “excessive”), the evaluation may not only pause to allow the operator an opportunity to correct the problem, but the latest block of data may also be rejected.

(Spec., pg. 4, ll. 14-21). Additional details concerning the “method and apparatus for detecting excessive noise contribution, and for detecting non-physiological noise and determining when such non-physiological noise is excessive” are set forth in the Specification at pages 9-12.

The Thornton patent does not teach these concepts. Specifically, the Examiner states in the rejection that the Thornton patent discloses a signal conditioner (15) that filters out the signal components above and below the range of frequencies of interest

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(column 3, lines 10-37), and that this disclosure reads on “means for detecting noise associated with said EEG response.” The Examiner goes on to state that:

It is interpreted that the signal components comprise noise components including non-physiological noise and ambient acoustic noise.

Even accepting this interpretation, this does not support a conclusion that the Thornton patent teaches the claim limitations listed above. Detecting an EEG response, which may or may not include non-physiological noise, is not the same as “detecting when non-physiological noise is associated with said EEG response,” as recited in claims 29 and 31, or “determining the polarity bias of said noise component,” as recited in claim 33. Neither of these functions is described in the Thornton patent.

“To anticipate a claim reciting a mean-plus-function limitation, the anticipatory reference must disclose the recited function identically.” Transclean Corp. v. Bridgwood Services, Inc., 290 F.3d 1364 (Fed. Cir. 2002). Because the functions recited in the claim limitations listed above are not “recited identically” in the Thornton patent, the rejection of claims 29, 31, and 33 should be withdrawn.

Claim Rejections – 35 U.S.C. § 103

Of the claims rejected for obviousness under § 103, claims 42, 53, and 59 have been cancelled, thereby obviating the rejection of those claims. As to the other rejected claims – claims 40, 47, 52, and 56 – Applicant respectfully submits that the Examiner’s rejection of those claims was in error, for the reasons set forth below.

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Turning first to the claims at issue, claim 40 recites a limitation drafted in means-plus-function form that includes a function not taught or suggested by the Thornton patent.

Specifically, claim 40 recites:

“means for determining the polarity bias of said noise component” and
“means for determining when adverse evaluation conditions are present,
based upon both said noise magnitude and said noise polarity bias”

Claims 47, 52, and 56 are method claims, and each recites a method step that is neither taught nor suggested by the Thornton patent. For example, claim 47 recites a method step of:

“determining a degree of polarity bias in said noise; and determining when
said bias is excessive relative to a threshold”

Claim 52 recites the steps of:

“determining the degree of polarity bias in said noise,” and
“determining when adverse conditions are present, based upon both said
noise amount and said noise polarity bias”

Finally, claim 56 recites the steps of:

“detecting the degree of polarity bias in said noise,”
“determining when said bias is excessive relative to a threshold,” and
“accounting for any excessive bias”

As noted above, these claim limitations are directed to functions and method steps relating to detection of non-physiologic (asymmetric) noise separate from symmetric noise. These are functions and methods that are simply not taught or suggested in the Thornton patent.

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Turning to the rejections, the Examiner relied solely upon the Thornton patent to reject the subject claims. In doing so, the Examiner admits that the Thornton patent does not teach or suggest the above claim limitations, stating:

It is obvious that although Thorthon [sic] is not using polarity bias to detect noise, that it could be done if he had designed his apparatus to do so.

This conclusion turns the law of obviousness on its head. The Examiner essentially concludes that Applicant's claims would have been unpatentable for obviousness if the Thornton patent described something more like Applicant's invention than it actually does. This is well beyond simply using hindsight reconstruction to combine the teachings of multiple references, which itself is improper. Sensorics, Inc. v. Aerosonic Corp., 81 F.3d 1350, 1358 (Fed. Cir. 1998). Far worse, here the Examiner has inserted subject matter into a reference that is simply not there. The fact is, and the Examiner admits, that the Thornton patent does not teach using polarity bias to detect noise, nor does it teach any of the functions or method steps from the claims at issue listed above. As a result, it cannot be concluded that the present claims are unpatentable for obviousness over the Thornton patent.

Simply stated, the Examiner has failed to set forth a prima facie case of obviousness in relation to claims 40, 47, 52, and 56. Accordingly, the rejections of those claims under § 103 should be withdrawn.

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Amendments and Allowed Claims

The Examiner stated in the office action that claims 34, 36-39, 41, 43-46, 48-51, 54, 55, 57, 58, and 60-63 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. By the present Amendment, claims 36, 41, 43, 54-55, and 60-62 have been amended to place them in the requested form. Allowance of these claims is requested.

Of the remaining claims of this group, although not amended themselves, several of these claims – claims 37-39, 44-46, and 63 – now depend from claims that have been amended to comply with the Examiner's objection. These claims, therefore, are also in condition for allowance.

Finally, as to the remaining claims from the group – claims 34, 48-51, and 57-58 – each of these claims depends from one of the claims rejected for anticipation or obviousness, which claims are addressed in the two preceding sections above. As noted there, Applicant respectfully submits that those rejections were in error. Accordingly, for the reasons stated above, these claims should also be allowed.

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CONCLUSION

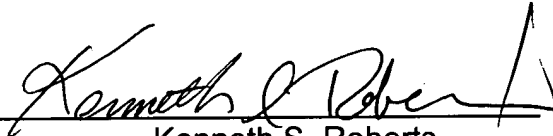
In view of the foregoing, it is submitted that the claims now presented in this application define patentable subject matter over the cited prior art. Accordingly, reconsideration and allowance of the application is requested.

Respectfully submitted,

Orrick, Herrington & Sutcliffe LLP

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By



Kenneth S. Roberts

Reg. No. 38,283

Attorneys for Applicants

4 Park Plaza
Suite 1600
Irvine, California 92614
(949) 567-6700